IN THE CLAIMS;

1-37. (canceled)

38. (Previously Presented) A method for producing a coating for absorption of neutrons generated in nuclear reaction of radioactive materials on a shielding element at least partly, the method comprising:

providing a shielding element having a base material and appropriately predefined surfaces;

providing a dispersion bath comprising a first substance having a high neutron capture cross-section and a second substance being electrolytically precipitable metallic wherein the first substance is in a form of an electrically conductive compound;

submerging said shielding element at least partly with appropriately predefined surfaces to be coated into said dispersion bath;

intermittently generating a relative movement between the respective surface to be coated and the dispersion bath during the coating process; and

removing the shielding element from said dispersion bath.

39. (Previously Presented) The method as set forth in claim 38, wherein the second substance is one element of the group that consists of nickel, cadmium and copper.

40. (Previously Presented) The method as set forth in claim 38, wherein the first substance is at least one of the elements of the group that consists of boron, gadolinium, cadmium, samarium, europium and dysprosium.

41. (Previously Presented) The method as set forth in claim 40, wherein the first substance is an isotope having an augmented neutron capture cross-section.

42. (Previously Presented) The method as set forth in claim 38, wherein the electrically conductive compound of the first substance is a metallic compound.

43. (Previously Presented) The method as set forth in claim 42, wherein the electrically conductive compound of the first substance is metal boride.

44. (Previously Presented) The method as set forth in claim 38, wherein the relative movement is generated by moving the surface to be coated.

45. (Previously Presented) The method as set forth in claim 38, wherein the relative movement is generated by blowing in a gas and/or by introducing ultrasound waves.

46. (Previously Presented) The method as set forth in claim 38, wherein the dispersion bath is thoroughly mixed at least periodically during the coating process.

47. (Previously Presented) The method as set forth in claim 38, wherein the process is performed in a ceramic or glass vessel.

48-58. (cancelled)